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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/695,840	10/26/2000	Shinsuke Henmi	Q61431	3264

7590 04/06/2007
Sughrue Mion Zinn Macpeak & Seas
2100 Pennsylvania Avenue NW
Washington, DC 20037

EXAMINER

MULLINS, BURTON S

ART UNIT	PAPER NUMBER
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2834

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/695,840

Applicant(s)

HENMI ET AL.

Examiner

Burton S. Mullins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 21-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 21-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 17 January 2002 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because a list of all the references per 37 CFR 1.98 has not been provided. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

Claim Rejections - 35 USC § 112

2. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Recitation “in the direction of a motor shaft” is indefinite because it is not clear if this means the pigtail’s one end extends radially, toward the motor shaft (i.e. perpendicular to the shaft) or axially, in a direction parallel to the shaft. For purposes of comparison with the prior art, the latter interpretation will be taken.

Claim Rejections - 35 USC § 103

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3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

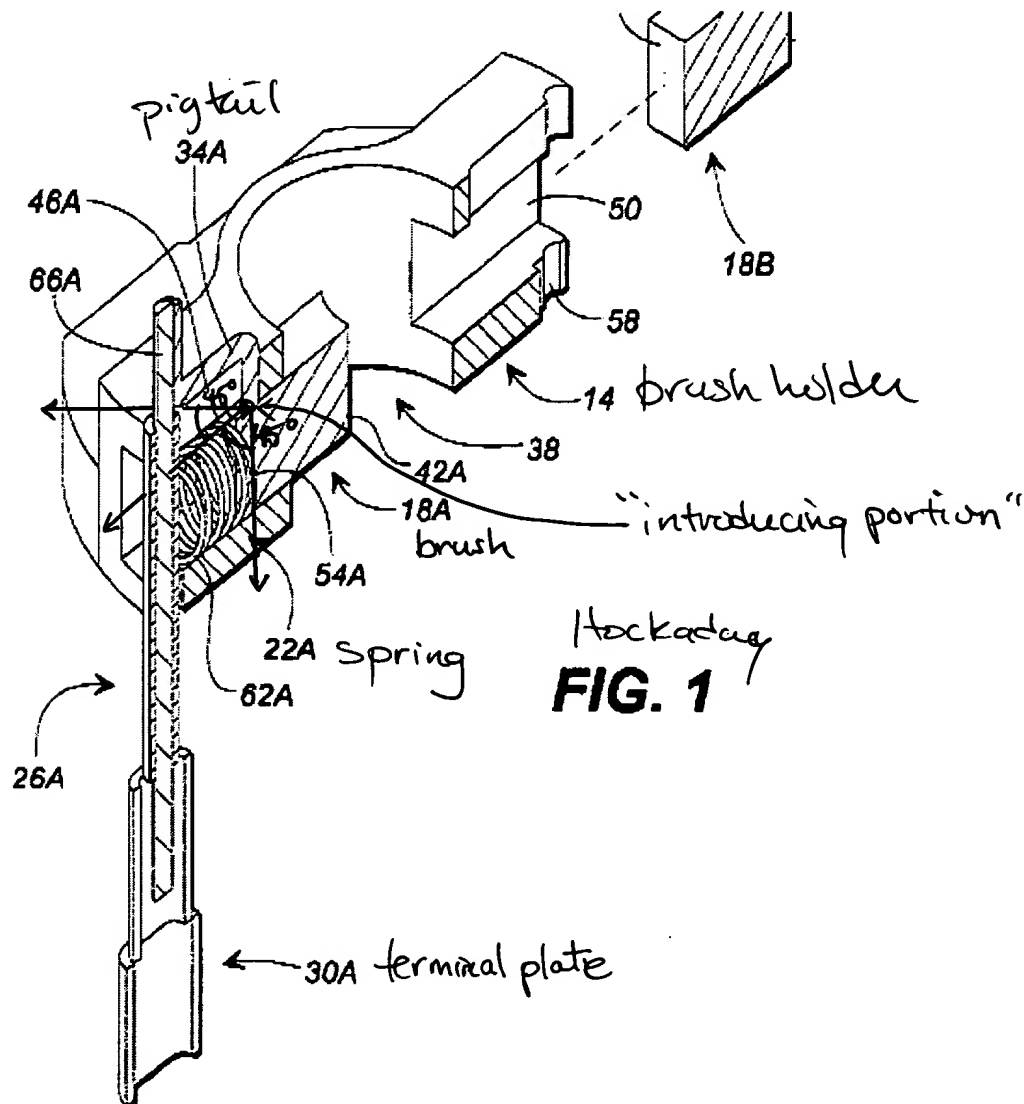
4. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wakao et al. (US 5,785,145) and Hockaday (US 6,246,144). Wakao generally teaches applicant's invention including a brush holder for a dynamo-electric machine comprising a motor for an electric power steering apparatus (c.1:5-8), the dynamo-electric machine rotatable in both directions (inherent); a brush holder 33 wherein a spring 36 and a brush 35 are disposed on a brush holder base (insulator) 34 (Fig.2; c.4:10-15); and a pigtail (lead wire) 37 having one end extending from an "introducing portion" (not numbered) of the brush 33 "in the direction of a motor shaft" [sic] (Fig.2 shows pigtail 37 connected to brush 35, the pigtail extending axially from the "introducing portion", in a direction generally parallel to shaft 30).

The second end of Wakao's pigtail 37 is connected to an output section of the drive circuit on drive circuit board 22 (c.4: 16-18) and therefor Wakao does not teach "a terminal plate connected to a second end of the pigtail [37] in an area within $\pm 45^\circ$ from the introducing portion toward the radial direction of the brush holder [33] toward and outside of the brush holder".

Hockaday teaches a brush holder and lead arrangement for a dynamo-electric machine comprising a brush holder (holder/card) 14 including a spring 22A and a brush 18A set in a brush holder base (slot) 50 (Fig.1). A pigtail/shunt 34A extends from an introducing portion in the brush 18A (i.e., pigtail 34A connects with brush 18A at a connection point, not numbered; Fig.1) in the direction of a motor shaft (i.e., the pigtail 34A extends radially relative to the machine axis, as does the brush holder 14; Fig.1; c.3:20-23). Hockaday teaches that terminal plate 30A and the pigtail 34A are connected in an area within $\pm 45^\circ$ from an introducing portion

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toward the radial direction of the brush holder (at portion 66A; see marked Fig.1 below) toward an outside of the brush holder. This arrangement compresses the spring used to bias the brush toward the commutator (c.1, lines 5-11).



It would have been obvious to modify Wakao and provide the terminal plate and the pigtail connected in an area within $\pm 45^\circ$ from the introducing portion toward the radial direction

of the brush holder per Hockaday to utilize the lead to compress and spring, thus biasing the brush toward the commutator and ensuring contact.

Regarding claim 2, in Hockaday the terminal 30A and the pigtail 34A are connected in an area around a sliding axis of the brush “within the width of the brush” [sic] since the terminal/pigtail connection at portion 66A lies more or less radially of the brush 18A (Fig.1).

Regarding claims 3-4, in Hockaday, the pigtail is “introduced from the brush” [sic] in a direction toward a motor shaft (not shown, inherent) since the pigtail 34A is routed to the brush 18A along a generally radial path (Fig.1).

Regarding claims 5-7, in Hockaday a column comprising portion 66A extends from the terminal plate 30A to connect with the pigtail 34A (Fig.1).

Regarding claims 8-11, in Hockaday, the pigtail is “introduced from a backside of the brush” [sic] in the sense that the pigtail 34A is routed to the brush 18A along a generally radial path, from the direction of the backside of the brush, or that the pigtail connects to the brush at one end of the brush, i.e. a radial “backside” of the brush (Fig.1).

5. Claims 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wakao et al. (US 5,785,145) and Ozaki et al. (US 4,311,936). As described above, Wakao generally discloses applicant’s invention but differs in that the pigtail (lead wire) 37 does not extend from the introducing portion in the brush 35 “in the direction of the sliding axis of the brush” and further does not teach “a terminal plate connected to a second end of pigtail in an area within $\pm 45^\circ$ from the introducing portion in a direction of the sliding axis of the brush toward an outside of the brush holder”.

Ozaki teaches a brush holding device 16 including a guide cylinder 18, a brush 19 and coil spring 21 fit into the cylinder, and a brush terminal 27 positioned to abut against the outer end of the guide cylinder and electrically connected with the brush 19 through a pigtail 22 (Figs.1-4). As seen in Figs.3&4, the pigtail 22 extends from the introducing portion in the brush 19 in a direction of a sliding axis of the brush 19, and the terminal plate 27 and the pigtail 22 are connected in an area within $\pm 45^\circ$ from the introducing portion toward the radial direction of the brush holder 16. Ozaki's arrangement allows for easy brush replacement (c.1, lines 55-58).

It would have been obvious to modify Wakao and provide a pigtail extending from the introducing portion in the brush in a direction of a sliding axis of the brush and the terminal plate and the pigtail connected in an area within $\pm 45^\circ$ from the introducing portion toward the radial direction of the brush holder per Ozaki since this would have allowed for easy brush replacement.

Regarding claim 23, as seen in Figs.3&4 of Ozaki, the terminal plate 27 and the second end of the pigtail 22 are connected in an area within the width of the brush 19 along a radial direction of the brush holder 16.

6. Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wakao et al. (US 5,785,145) and Southall (US 5,159,222). As described above, Wakao generally discloses applicant's invention but differs in that the pigtail (lead wire) 37 does not extend from the introducing portion in the brush 35 "in the direction of the sliding axis of the brush" and further does not teach "a terminal plate connected to a second end of pigtail in an area within $\pm 45^\circ$ from the introducing portion in a direction of the sliding axis of the brush toward an outside of the brush holder".

Southall teaches a brush holder plate 11 including brush cartridge 15, a brush 26 and coil spring 27S fit into the cartridge (Fig.3), and a brush terminal (spade connector) 23 electrically connected with a pigtail 25 at upper channel portion 24 (c.5, line 56-c.6, line 8). As seen in Fig.3, the pigtail 25 extends from the introducing portion in the brush 26 in a direction of the sliding axis of the brush 26, and the terminal plate 23 and the pigtail 25 are connected in an area within $\pm 45^\circ$ from the introducing portion toward the radial direction of the brush holder 11 (Figs.1&3). Southall's brush holder facilitates removal and replacement of worn commutator brushes (c.3, lines 22-34).

It would have been obvious to modify Wakao and provide a brush holder per Southall having a pigtail extending from the introducing portion in the brush in a direction of the sliding axis of the brush holder, the terminal plate and the pigtail connected in an area within $\pm 45^\circ$ from the introducing portion toward the radial direction of the brush holder since this would have facilitated removal and replacement of worn commutator brushes.

Regarding claim 22, in Southall a column comprising upper channel portion 24 extends from the terminal plate 23 to connect with the pigtail 25 (c.5, lines 63-68; Fig.3).

Regarding claim 23, as seen in Figs.1&3 of Southall, the terminal plate 23 and the second end of the pigtail 25 are connected in an area within the width of the brush 26 along a radial direction of the brush holder 11.

Response to Arguments

7. Applicant's arguments filed 15 March 2007 have been fully considered but are moot in view of the new grounds of rejection.

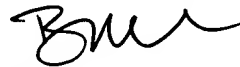
Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 571-272-2029. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Burton S. Mullins
Primary Examiner
Art Unit 2834

bsm
30 March 2007